

**System and Method for
CPI Scheduling on SMT Processors**

ABSTRACT

A system and method for identifying compatible threads
5 in a Simultaneous Multithreading (SMT) processor
environment is provided by calculating a performance
metric, such as CPI, that occurs when two threads are
running on the SMT processor. The CPI that is achieved
when both threads were executing on the SMT processor is
10 determined. If the CPI that was achieved is better than
the compatibility threshold, then information indicating
the compatibility is recorded. When a thread is about to
complete, the scheduler looks at the run queue from which
the completing thread belongs to dispatch another thread.
15 The scheduler identifies a thread that is (1) compatible
with the thread that is still running on the SMT processor
(i.e., the thread that is not about to complete), and (2)
ready to execute. The CPI data is continually updated so
that threads that are compatible with one another are
20 continually identified.